



County of Los Angeles

# Enterprise Geographic Information Systems (eGIS)

## ~~2009~~-2012-2015 Strategic Plan

August 24, 2009

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BACKGROUND

Geographic Information Systems (GIS) technologies are critical tools for improving the quality, accuracy, efficiency, and responsiveness of government services provided by the County of Los Angeles. Using the concept of an “electronic” or digital map, GIS records, stores, and analyzes multiple layers of spatial data and relates this data to locations of interest (e.g., communities, neighborhoods and people that live there). These layers contain data in the form of points (e.g., addresses, locations, etc.), lines (e.g., streets, highways, etc.), polygons (e.g., areas, political jurisdictions, etc.) and images that can be viewed in various combinations to identify and display underlying spatial relationships.

VISION

A countywide enterprise approach to GIS will optimize the efficiency and effectiveness in the use, acquisition, and dissemination of GIS data and resources. This will increase the cost-effectiveness, innovation, reliability, accuracy, and value of geospatial information and tools, leading to improved outcomes and enhanced services to the public.

MISSION

- Develop mutually accepted standards, policies, and business practices;
- Communicate the value of GIS to County departments and agencies;
- Encourage collaborative GIS efforts among County, government, and related organizations;
- Ensure that GIS resources are available for day-to-day operations;
- Maximize the cost-effectiveness of GIS investments;
- Cultivate the advanced use of GIS;
- Pursue the innovative use of GIS and related technologies;
- Integrate GIS technologies into County business operations;
- Support emergency and disaster planning, response, and recovery.

STRATEGIES		
Objectives	Strategies and Tactics	NotesStatus
1. GEOSPATIAL DATA MUST BE CREATED, DOCUMENTED, AND MAINTAINED TO MEET OR EXCEED NATIONAL, STATE, AND COUNTY STANDARDS.		
A	Identify and implement data collection, metadata, and spatial accuracy standards and policies.	Implement Metadata standards
		Implement Field Survey Data Standards (horizontal and vertical)
		Implement Address standard
		Implement spatial accuracy standards for street based, parcel based, or survey [cadastral] based GIS data layers
B	Develop and Implement quality assurance procedures for GIS data to ensure identified standards are followed.	Develop and implement quality assurance mechanisms to test and ensure that metadata follows standards
		Host data editor meetings regularly
C	Identify data layers to include in the Enterprise GIS Repository  Update in future meetings	Develop and approve policy about loading data layers into the GIS Data Repository
		Update the list of data layers. Develop an ongoing survey for that are maintained by County departments to identify new data layer needs. Departments.
		Develop a list of data layers that should be available in the Repository. Develop an ongoing survey for County departments to identify new data layer needs.
		Leverage federal and state framework data layer listings to obtain a list of data layers that should be available to county departments.
		Create and maintain a list of data layers stored in the Enterprise GIS Repository.
D	Create and/or acquire datasets as necessary	Undertake projects to create data when necessary (e.g. CAMS)
		Undertake projects to purchase data when necessary (e.g. LAR-IAC, Thomas Brothers, businesses)
		Identify sources and partners for data acquisition or other stewards (e.g. Hydrography, NHD, etc)
E	Identify required resources for geospatial data	Assign data layers to owners for maintenance

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	maintenance. Ensure required resources are allocated. Identify ownership and maintenance responsibility for data layers	Maintain information about frequency of data updates, the importance of data updates, and the last date updated.	
F	Ensure data layers are based on a common base layer(s) – for cartographic and analytical purposes	Move GIS data to the parcel level for increased accuracy (where appropriate)	Supervisory Districts, city boundaries, etc.
		<a href="#">Improve the accuracy of the parcel dataset to survey grade</a>	
		Determine priority and order in which to migrate data layers to parcel level	
		Maintain data at the parcel accuracy level	
		<a href="#">Investigate the feasibility of the ESRI Local Government data model as a way to manage all data on a single basemap and single system</a>	
G	Distribute County GIS data as widely as possible to ensure reduced duplication of effort	Create a central web-based location where GIS data can be made available for download.	<a href="#">DONE - GIS Data Portal</a>
		Where possible make data available for free.	
H	<a href="#">Where possible use publicly available information (e.g. the County can “own” the GIS Data we use and any updates we make)</a>	<a href="#">e.g. Thomas Brothers replaced by TIGER</a>	

Objectives		Strategies and Tactics	Status
2. ENSURE THAT THE COUNTY’S GIS SYSTEMS ARE AVAILABLE FOR DAY-TO-DAY COUNTY/REGIONAL PURPOSES			
A	Identify GIS development standards and best practices	Develop GIS web services and applications utilizing <del>OGC, W3C, DHS, and other</del> standards where relevant.	<del>- ESRI REST endpoints, Google and Bing enterprise license.</del>
		<del>Sign countywide licenses for commercial mapping services to reduce costs; where possible.</del>	<del>Google, Bing</del>
		<del>Develop a mobile GIS development standard, and ensure platform independence, if possible.</del>	<del>Review Latitudes’ new platform.</del>
		<del>Identify a web GIS development standard (flex vs. Silverlight vs. HTML5); if possible.</del>	<del>Geocortex Essentials and IMF</del>
B	Identify Data Storage Standards	Identify spatial database technology standards for data storage.	<del>- Investigate SQL Spatial vs. SDE</del>
		<del>Purchase and maintain</del> <del>Maintain a SAN server for long term centralized data storage mechanism for the County GIS Repository.</del>	<del>- Purchased 2009</del>
C	Identify mechanisms to view and access GIS Data	<del>Identify</del> Desktop GIS, Web-based GIS, Mobile GIS, Developer APIs and frameworks (SDKs)	ESRI defined as a county standard
		<del>Investigate the feasibility of using free and Open Source GIS software (e.g. qGIS, gvSIG, TileMapper)</del>	
		Develop mechanism to access GIS files (internal and external)	<del>- DONE – GIS Data Portal</del>
		Develop and document Web Services and directories (UDDI) to provide access to GIS capabilities.	<del>- Applications Development Working Group</del> <del>Replaced by Data Portal?</del>
		Implement <del>FTP (File Transfer Protocol)</del> downloads of GIS data and software.	<del>- Data portal – DONE</del>
		Create GeoRSS feeds of County GIS data for wider distribution.	<del>DONE</del>
		Make sure the system architecture supports internal and external applications.	<del>- DONE – eGIS has intranet and internet servers</del>
D	Establish <del>LA county Enterprise GIS portal website</del>	Create the http://gis.lacounty.gov web site to provide a central entry for county GIS	<del>- The eGIS Blog handles this.-</del>
		Implement access control on the portal.	<del>The data portal makes certain layers visible but no accessible.</del>
		Link(s) to GIS sites and projects of all County departments	<del>- eGIS Blog – see 4H?-</del>
		Link(s) to training - resources for County GIS users and professionals	<del>eGIS Blog</del>
E	Develop data access control and security standards	Link(s) to data and software download locations.	<del>eGIS Blog</del>
		Password enable servers, map services, etc	<del>- Implemented SSL &amp; ArcGIS Server security</del>
		Determine security for each data layer in the eGIS Repository	Ensure licensed data (i.e. LAR-IAC) is only available to licensees.
		Ensure HIPAA compliance for sensitive GIS data layers.	
F	Develop a standard level of service at the	Document GIS System configuration/hardware.	<del>- Should ISD publish its documents</del>

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	Enterprise GIS to ensure availability of GIS data and systems		(where?)-
		<u>Develop a standard eGIS "Service Level Agreement" between ISD and departments.</u>	<u>ISD should develop</u>
		Develop and implement plan to have development, test, and production environments for Enterprise GIS services and applications.	<u>- In development</u>
		Meet with GIS System Administrators and relevant ISD sections on a regular basis to ensure ISD understands GIS system requirements.	Meet every 3 months <u>- need to establish</u>
		Define & document requirements for security, technical support, response time, uptime, help desk support, backup and disaster recovery.	<u>- See the SLA idea</u>
H	Monitor usage of GIS software, hardware and applications to ensure allocation of sufficient resources for current and planned usage	Monitor ArcGIS license consumption. Activate and upgrade licenses as necessary.	<u>-Identified OpenLM</u>
		<u>Consolidate departmental licenses into a single license pool to reduce licensing costs where possible while ensuring license availability at all times.</u>	<u>Developing this directive</u>
		Design metrics to evaluate usage of GIS systems to support system and budget planning.	
		<del>Define software purchase requirements to meet defined goals.</del>	
		Regularly monitor and report on Web and application statistics	Geocortex Statistics, Optimizer
		Design GIS applications so that metrics exist for availability/usage of apps and user information capture (if possible).	<u>-Use Google Analytics or in-built tools.-</u>
		Monitor use and availability statistics on GIS applications and software.	Geocortex UpTime, Optimizer
I	Ensure cost effectiveness of all GIS usage and solutions (e.g. - obtain least expensive license)	<del>Coordinate purchases with other agencies and jurisdictions</del> <u>Leverage collaborative purchasing agreements where possible</u> to achieve cost savings.	-
		Implement web-based GIS toolsets for Countywide use.	Latitude Geographics products.
		Complete ESRI Master Purchase Agreement to reduce software purchasing costs.	ESRI MPA
		Upgrade unused licenses instead of purchasing new licenses.	
		Investigate the feasibility of an ESRI Enterprise License Agreement.	
J	<u>Where possible, make County GIS resources available to external agencies</u>	<u>Allow agencies to access County mapping services where feasible.</u>	<u>See 4H – need to determine support model – but right now it is part of LAR-IAC.</u>
K	<u>Plan the capacity, scalability, resources</u>	<u>Examine the existing system load by regularly working with vendor to plan and anticipate the future growth</u>	
		<u>Regularly work with vendor to design and architect the eGIS systems for scalability (i.e. Especially during the time of disaster, election, and tax roll)</u>	
		<u>Plan ahead the staff availability in order to accommodate the anticipated growth, support the users in timely manner, and provide the excellent user support.</u>	

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Objectives		Strategies and Tactics	Status
3. CULTIVATE THE ADVANCED / ANALYTICAL USE OF GIS			
A	Inform GIS users of agencies successes in utilizing advanced analytical tools of GIS	Publish GIS related articles in county publications.	-Case Studies!-
		Prepare case studies showing the advanced/analytical use of GIS.	-Case Studies!
		Encourage and assist County agencies to apply for productivity awards on GIS related projects.	-
		JustifyWrite articles about how GIS aligns with and supports the goals of the County Strategic Plan.	
B	Develop and teach GIS courses to foster advanced usage of GIS in activities	Develop in-house GIS Training classes (ESRI-certified instructor) where possible	DONE
		Purchase online GIS Computer Based Training for LA County Departments to share	Need to identify (does this mean the ESRI conference video)
		Internal County Knowledge Exchange – Develop periodical “how-to” training sessions on GIS tools, data, and analysis, etc	eGIS Blog – I have tips and tricks – does this work?
		Work with local colleges and universities to offer GIS classes and degrees needed by the different County Departments for County positions.	See the GIS Classifications – also presenting at the USC Geospatial Forum
		Develop Countycountywide GIS User Group to support informal exchange of GIS expertise- (county and other agencies)	SoCalGIS, Regional GIS Forum, LAR-IAC user group
C	Foster attendance at conferences and other outside training opportunities to advance users skills	Encourage informal departmental GIS meetings (brown-bags) to spread GIS expertise.	-See DPW and DPH. Get lessons learned document.-
		Maintain list of GIS conferences and promote via email, websites, publications, and user groups.	
		Develop language to communicate the value of conferences to management.	
		Purchase ESRI User Conference Proceedings CD/DVD.	-Make it part of eGIS? Perhaps purchase the web-based version?
D	Develop and maintain applications and services to simplify the advanced/analytical use of GIS	Develop commonly used web services for GIS application development.	Application Developer Working Group
		Develop models and procedures/scripts to automate GIS processes	
		Distribute and share models via ArcGIS Server or other technologies.	
		Encourage the use of application development frameworks (APIs/SDKs/ESRI/Geocortex)	Application Developer Working Group
E	Develop a GIS classification series to support the recruitment and retention of GIS expertise	Work with CEO Compensation to create a single unified GIS series for countywide GIS staff.	DONE
		Work with local colleges and universities to develop curriculum relevant to LA County.	
		Develop GIS internship program.	CBEPP
F	Pursue and evaluate new technologies and data formats to enhance GIS use-ability and value.	Investigate approaches to moving to 3-D world (3D printer, 3D visualization, buildings, etc).	- Get a grant to buy a 3D printer
		Evaluate and apply the different applications, usages, and value of mobile GIS.	Should mobile be a strategy?



		Evaluate and integrate GIS technologies, web services, etc with different technologies to enable more dynamic features and capabilities (Cognos SpotOn, APEX, .NET, etc)	Application Developer Working Group
		Investigate Open Source GIS software.	<a href="#">eGIS Blog has a dedicated page</a>
		Investigate integration of Web 2.0 technologies with GIS.	
		Investigate GIS enhancements to existing County Systems (Cognos, SQL Server, ...)	<a href="#">Cognos has a plugin, investigation SQL Spatial.</a>
G	Create and collect Countywide knowledge-base, geoprocessing models, code base, methods, etc (standards and procedures, tutorials, and “how-to” for certain GIS analyses and processes).	Develop central GIS code base to promote re-use, sharing, efficiency, and collaboration.	
		Develop cartographic standards and models	<a href="#">Distribute .mxd files that make the LA County Caches.</a>
		Develop tutorials and “how-to’s” for complex GIS analyses and processes	

Objectives		Strategies and Tactics	Status
<b>4. RAISE THE AWARENESS OF GIS</b>			
<b>A</b>	Regularly inform current and potential users of GIS activities, system status, resources, etc.	Publish GIS related articles in county publications	<del>-GIS Day events-</del>
		Publish quarterly newsletter highlighting GIS activities in the County.	<del>-Recommend removing this and focusing on the blog.-</del>
		Publish information about GIS activities in the eGIS blog.	<del>-Done.</del>
		Develop and publish GIS case studies showing the benefits of GIS.	<del>-Need to update current case studies.-</del>
<b>B</b>	Coordinate/participate in regional GIS meetings and activities to maintain knowledge of GIS activities relevant to existing/future applications	Attend local and regional government sponsored GIS User Groups, when topics directly impact the County or merit the County's presence.	<del>-Establishing the Regional GIS Forum- and participate in the SoCalGIS</del>
		Acquire information about GIS in other agencies around the County	<del>-Establishing the Regional GIS Forum and participate in the SoCalGIS-</del>
		Support and attend Regional GIS meetings	<del>Remove – see first item</del>
		Meet with Federal and State GIS representatives when appropriate.	<del>Regional GIS Forum/</del>
		Work with other jurisdictions' GIS staff on technical/data issues as appropriate (e.g., centerlines).	<del>CAMS/LARIAC.</del>
		Monitor legislative and regulatory issues that could affect GIS.	<del>What is the process for this – For example the Orange County case.</del>
<b>C</b>	Provide training on basic use of GIS and its capabilities	Assess County GIS training needs as they relate to audience, frequency, format, and content	<del>-We need to conduct an assessment. Recommend a survey to departments and GIS staff.-</del>
		Document standard connection information to GIS Repository for training classes.	<del>-Done. Where do we publish this.-</del>
		Promote County GIS training classes.	<del>Done.</del>
		Develop 1 hour ("what is GIS") training for managers <u>and conduct regular manager trainings</u>	<del>-Done for GIS Day 2011 – need to -establish a training schedule.</del>
<b>D</b>	Conduct, and participate in, special events	Organize and publicize annual GIS Day event.	<del>Done.-</del>
		Develop and provide special presentations to groups/agencies as requested	
		Staff events/meetings as requested	<del>-Remove – part of the line above.</del>
		Plan/Participate in County awareness events	<del>-Remove – this is part of GIS Day and part of departmental GIS staff work – but should we list this.-</del>
<b>E</b>	Present papers and participate at conferences and events where they will share information with key local, regional, national audiences	Support participation in local, regional and national GIS conferences and events	<del>-Develop specific language supporting conference attendance</del>
		Write papers and/or make presentations at conferences, or document the value and reason for going.	<del>-</del>
		Apply for awards wherever possible.	<del>CGIA/Naco/Best of California</del>
		Post papers written by county staff on websites.	
<b>F</b>	Provide GIS tools for public and non-technical	Implement GIS components on the County portal and other web sites.	<del>-Develop embeddable GIS maps.-</del>

	users.	Integrate County portal and eGIS website – add GIS page to the County portal.	<del>-Need to do this.-</del>
		Develop and maintain a list of static maps (in electronic format) available for download and/or purchase.	<del>-Add to eGIS or Data Portal?-</del>
		Develop “Map-It” link for facilities to be mapped.	<del>-Done as part of Services Locator-</del>
G	Build staff level understanding of, and support for, GIS	Identify and present to senior level committees (i.e. TSAB, eGAC, Admin Deputies, Board Deputies) to educate members on GIS capabilities, strategies, and plans.	<del>-Cluster meetings.-</del>
		Establish mechanism within County GIS community to gather and share information on opportunities (e.g., info on grants, etc through user meetings, interviews, teams, ops)	<del>eGIS blog-</del>
H	Increase general public knowledge of GIS resources and capabilities	Publicize new applications	<del>-Leverage case studies and eGIS blog-</del>
		Maintain library of resources and applications on eGIS portal.	<del>Add more applications to eGIS stie</del>
		Establish pricing scheme for data subscription service.	<del>-Leverage LAR-IAC for this.-</del>
I	Increase agency support and staffing of GIS	Work with County departments that are consistently using large amount of GIS project support and do not have their own GIS staff – to internalize that work.	<del>-GIO supports through -the new classifications.</del>

Objectives		Strategies and Tactics	Status
5. SUPPORT AND DELIVERY OF GIS PRODUCTS & SERVICES			
A	Improve technical support by working closely with GIS experts and the user community	Work with members of the eGIS Steering Committee to provide technical assistance	
		Publish and maintain list of FAQ's that detail problems and resolutions (internal)	<u>- See 3G – is this duplicative?</u>
		Maintain a list of GIS applications and/or services available to County staff (by application, by department and/or by function)	Some of this on the eGIS Site (needs to be updated)
		Establish notification system for system outages (planned or otherwise) – for applications and underlying databases (or servers)	ISD is doing this already
B	Develop internal databases, applications, and processes to improve customer service	Coordinate with department specific applications and databases as well as the work done by ISD Urban Research	This is necessary to reduce duplication of efforts
		Develop a ISD GIS service request form(s) and procedures	
		Develop a Service Level Agreement (SLA) with all eGIS participating departments	<u>Noted in another section</u>
C	Maximize use of the web to deliver GIS products and services (related to Goals 2 C and 3D)	Update the County portal, eGIS Blog site, and department websites where appropriate to increase information dissemination	Make GIS more prominent; provide back end GIS to provide query results
		Establish procedures and create disclaimer language for GIS data download pages.	Public Works and Regional Planning have these pages; Assessor has a link to data for sale.
		Coordinate with other County committees (TSAB, EGAC, ISAB) regarding other IT/Web initiatives	<u>-Part of the IDD Web team.</u>
D	Provide appropriate staff with the skills and resources necessary to provide support.	<del>Train/Identify training requirements for each level of GIS Analyst</del> <del>Train all appropriate GIS analysts and users (related to Goal 4, C)</del>	<u>-Supported by the new GIS Classifications-</u>
		<u>Train all appropriate GIS analysts and users (related to Goal 4, C)</u>	<u>Supported by the new GIS Classifications</u>
		Maintain contact list of departmental GIS leads (that details their areas of expertise, department and schedule/availability).	This would help for GIS emergency volunteer corps as well.
		Provide support staff with training on custom and off the shelf applications and system functions (e.g: GIS-NET, PSRS, CAMS, PAIS, ViewLA, etc.)	
E	Create and implement a maintenance strategy for GIS applications.	Review existing applications, data content, and functionality before developing new applications.	Department (application) specific really
		Develop maintenance strategy for application upgrades.	
		Maintain list of application, hardware, and data dependencies where applicable.	
		<u>Should ISD maintain a set of “older” technology servers?</u>	
F	<u>Develop processing on demand</u>	<u>Develop a method where departments can request temporary GIS processing capabilities.</u>	
G	<u>Investigate virtual GIS Desktops</u>	<u>Investigate the new hosted desktop solution to determine the feasibility of creating virtual GIS machines that will reduce the hardware and software costs for departments.</u>	
		<u>Investigate the ability to use virtual desktops to “rent” GIS machinery (departments don’t need to buy dedicated hardware and licenses.</u>	

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Objectives		Strategies and Tactics	Status
6. ASSIST AGENCIES TO INTEGRATE SPATIAL TECHNOLOGY INTO THEIR BUSINESS PROCESSES AND APPLICATIONS.			
A	Provide the ability to replace existing static maps on the County's inter/intranet site with dynamic web maps.	Develop GIS application architecture that allows for easily integrating map services into existing Web pages. <u>Done?</u>	-Develop API ...
		Support agency development of dynamic, interactive web maps as opposed to static maps provided the agency is taking the lead. <u>Keep - ongoing</u>	
		<u>Develop a service area locator function</u>	<u>Serviceslocator website?</u>
B	Develop and implement a methodology for responding to agency requests to incorporate GIS into their business process. <u>Mark's stuff</u>	Write and implement the methodology.	
		Maintain special projects database for managing projects	
		Document procedures for processing special project requests	
		Establish mechanism within GIS office to gather, document and share information on opportunities to incorporate GIS in county processes (e.g., through user meetings, interviews, teams, ops)	- <u>Leverage the manager training.</u>
C	Provide support and tools to integrate GIS into applications.	Aid agencies in identifying workflow processes that currently do spatial analysis without the aid of GIS. <u>Keep</u>	- <u>Case Studies ...</u> -
		Support the implementation of address validation into business applications <u>keep</u>	<u>Build API-</u>
		Involve other agency GIS and programming staff in the GIS application planning and design process. <u>Keep</u>	
D	Assist in acquiring resources to implement or enhance spatial capabilities.	Work with agency senior staff to identify candidate projects and assist them in submitting proposals. <u>Keep</u>	
		Work with agency staff to identify small budget, high return projects to be funded out of eGIS funds. <u>Keep</u>	
		Participate in advisory committees as needed (selection and technical). <u>keep</u>	
		Assist agencies in establishing positions that include GIS. <u>keep</u>	
		Serve on interview panels as requested for GIS positions in other agencies. <u>Keep</u>	
		Assist agencies in preparing proposals that include GIS related work. <u>Keep</u>	
E	Develop and implement processes and procedures to minimize spatial data redundancy	Revise GIS business process to obtain planned updates of addresses and incorporate them into CAMS (Countywide Address Management System). <u>Keep</u>	
		Identify and implement all attributes and geographies necessary to support applications and agencies. <u>?</u>	
		Maintain / run a stakeholders group for countywide addresses. <u>Keep</u>	- <u>CAMS Steering Committee</u>
		<del>Establish and maintain</del> <u>Maintain</u> one address source (CAMS)	- <u>Move to strategy 1?</u>
		Consolidate redundant data sets (e.g, airports, political jurisdictions) <u>Keep</u>	- <u>Move to strategy 1?</u> -
		Clearinghouse for GIS related support materials (RFPs, contracts, grants, awards, Statements of Work, etc) <u>?</u>	<u>eGIS Blog</u>
E		<u>Help support multi-user editing for projects involving more than one department.</u>	
		<u>Continue to build common repository for authoritative data from all departments</u>	

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Objectives		Strategies and Tactics	Status
7. SUPPORT EMERGENCY PLANNING, RESPONSE, AND RECOVERY			
A	Develop standard operating procedures for GIS in emergency response.	Develop policies and procedures to provide GIS support to the County in the event of a disaster.	
		Ensure the policies and procedures are consistent with Countywide standards.	
		Develop a mechanism for non-emergency support departments to provide GIS expertise to LA County CEOC/Lead Departments in times of disaster.	
		Develop lists of staff in each department capable of using GIS, their expertise, and their work/home locations.	Add question to DSW survey.
		Maintain master resource guide of existing GIS data, servers, software, and equipment.	
		Compile user guides for existing software, equipment (plotter, scanner, GPS units), and applications.	
B	Ensure availability of GIS data and resources during disasters and emergencies.	Identify disaster recovery locations to provide access to GIS data and resources during disasters.	LRC, EOC
		Inventory GIS resources available at the disaster recovery locations.	
		Coordinate with ISD's Disaster Recovery Section to ensure GIS is included in their policies and procedures.	
		Ensure that GIS software, data, services, and applications are the same version at disaster recovery locations. (GeoCortex, CAMS, other web applications, license manager).	
		Establish schedule for system replication to the disaster recovery locations.	
		Conduct regular testing or use of data, software, and equipment.	
C	Keep all departmental Emergency Response programs abreast of county GIS capabilities.	Maintain a list of departmental Emergency Response program directors.	
		Schedule periodic meetings with departmental directors to inform them of GIS capabilities in emergencies.	
		Inform Emergency GIS staff of alternate access mechanisms.	
D	Participate in Emergency Exercises and Trainings to ensure staff are up to date.	Participate in Emergency Response Exercises and Trainings, as necessary.	
E	Coordinate planning and response strategies with other local, state, and federal agencies	Develop relationships with FEMA, Cal EMA, Federal DHS, JRIC, CEO Office of Emergency Management, Sheriff Emergency Operations Bureau, and other relevant Federal, State, Regional, or local groups as necessary.	

[Location Management System?](#)

[Cadastral Landbase project?](#)

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